Update on ISST Activities

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IFPS Science Steering Team

- Brad Colman (WR) – Lead
- Kevin Schrab (OST) – Facilitator
- Mark Jackson (WR)
- Dan Baumgardt (CR)
- Andy Patrick (SR)*
- Steve Keighton (ER)
- Eric Stevens (AR)
- Bill Ward (PR)
- Pete Manousos (HPC)

*Leaving (promotion to MIC)

Current ISST Activities

- DGEX assessment summary and follow through to operational deployment
- Follow up with other requested model data on SBN
- Impacts on the digital forecast process
- Interaction w/ DSPO Action Teams
- Analysis of Record summit
- Responding to short term requests

DGEX Assessment
(Downscaled GFS w/ Eta Extension)

- Goal is to provide a stop-gap solution for downscaled model guidance for medium range grids
- Evaluation March 15 – April 21, 2004
- 10 WFOs (plus HPC) participated
- NCEP provided objective feedback
- Survey form provided subjective feedback

DGEX Assessment Summary

- Majority of forecasters found DGEX to be useful
  - Many positive comments on realism and value of externally forced mesoscale detail
  - Wind grids were used most often and deemed to be of the best quality, Max/Min T also used frequently
  - Favorable assessment -- even with a few drawbacks (timeliness, data outages, limited availability)

DGEX Assessment Summary (cont)

- Special considerations
  - Occasional significant differences between DGEX and GFS
    - Still, EMC objective verification shows DGEX and forcing GFS of equal skill
    - Requires training and increased forecaster experience to build confidence
  - Run-to-run variability impacting usefulness of DGEX (model flip-flop)
    - Underscores current imbalance between forecast resolution and forecast uncertainty (argument to apply ensemble guidance on DGEX background field?)
    - A synoptic-scale GFS issue, not a DGEX issue
  - Forecaster workload did not show an overall decrease
    - Expected for any new model, especially given impact of assessment activities
    - Should be reduced when all WFOs have DGEX, and when consistent methodologies for population are developed

Operational DGEX

- Still planned for OB3.2 (June?)
- 06 and 18Z (from 00 and 12Z GFS) for CONUS
- Available by ~10 and 22Z
- GFE Smart Inits from Tim Barker (WFO MSO)
- Can also be used as background field to apply MatchMOS (see Dave Novak's page)
  http://www.werh.noaa.gov/SSD/smarttools/newdata/newdata.htm
- Details on available fields on ISST page
  http://www.nws.noaa.gov/ost/ifps_sst/

Other New Model Data

- Eta12 Sfc fields thru 84 hrs (since Feb)
- "Full" Eta12, thru 84hrs, 4x/day (OB3.2)
- More GFS levels, thru 240hrs, 4x/day (OB3.2)
- "Full" set of GFS fields on grid 211, thru 240hrs, 4x/day (OB4)
- For details on these RCs, see ISST page

Review of Digital Forecast Process

- Identified factors impacting this process
- Soliciting input from forecasters (forums, regional meetings and conf calls)
- Develop recommendations for current and future forecast methodologies and system design, based on consensus from field
  (in the form of ISST position paper and continuous interaction with DSPO Action Teams)

Factors Impacting DFP
Cat 1: Impacts on Forecast Desk

- Forecast Quality (defn of "accurate", how best to verify?)
- Interface w/ GFE (minimize manual grid manipulations and maximize science tools)
- How to increase focus on shorter range and improve situational awareness
- Collaboration methods (to minimize discrepancies w/o sacrificing accuracy, how to best measure collaboration skill)

Factors Impacting DFP
Cat 2: Distribution of Duties in DFP

- Roles of NCEP centers vs. WFOs (i.e., HPC expertise in med. range)
- Roles of humans vs. NWP (when to populate w/ model grids, adding mesoscale/local detail, run-to-run variability, role of ensemble guidance, etc)

Lots of great discussion and background info from AMS "Future Role of Human in Forecast Process" Forum in Seattle
http://www.ametsoc.org/boardpges/bogm/forecasterforum.html

Factors Impacting DFP
Cat 3: Characteristics of the DFP

- Should database convey limits of free atmosphere predictability?
- Inclusion of probabilistic/confidence info
- Optimal spatial and temporal resolutions (scientific validity vs. customer needs, separate local and national databases?, change resolution with fcst interval?, etc)
- Area averaged (5km) vs point fcsts

Factors Impacting DFP
Cat 4: Customer Needs

- Access to DFP, how it's presented
- Collaboration between NWS and partners/customers (what are the real needs, how can users help us improve database, how best to educate?)
- Forecast update frequency (routine and event-driven)

Soliciting Field Input on the DFP

- NWS Discussion forum (separate forum for each category, ISST monitoring and responding when necessary)
  http://www.nwstc.noaa.gov/cgi/dcforum/dcboard.cgi
- ER SOO/DOH Meeting breakout sessions!
- Lead Fcstr Conf Calls?
- Future AMS workshops on role of humans in forecast process
- Considering initiatives/ideas from DSPO Teams, Regions, other groups

Liaison/Advisory Role on DSPO Action Teams

- Operations: Eric Stevens
- Assessment: Mark Jackson, Bill Ward
- Systems and Comms: Bill Ward
- Training and Outreach: Steve Keighton, Andy Patrick
- Program Planning: Brad Colman

Analysis of Record USWRP Summit

- June 29-30 in Boulder
- Goal: To determine operational requirements, science and remaining R&D issues that need to be addressed, potential roadblocks to implementation, strategy for implementation. Need to get this on a fast track!
- Key participants: NCAR/USWRP (Gall), NCEP (DiMego), Univ of Utah (Horel), WFO Seattle/ISST (Colman), MDL?, others in operational and research community
- Agenda/participants still being finalized

Role of ISST in DSPO Era?

- Can be confusing; expecting to get clarification from Jack Hayes, Leroy Spayd
- Provide input as needed directly to Action Teams
- Provide input, as requested, by other entities (Regions, Tech Steering Team, MDL, etc)
- Stay true to our charter: Identify and make recommendations on key IFPS science issues.